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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/608,311	06/30/2000	Xiao-Dong Xiang	6050/54207	9392

7590 05/18/2005

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EXAMINER

PATEL, PARESH H

ART UNIT	PAPER NUMBER
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2829

DATE MAILED: 05/18/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/608,311

Applicant(s)

XIANG ET AL.

Examiner

Paresh Patel

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 11 February 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-55 is/are pending in the application.
- 4a) Of the above claim(s) 1-21, 31-42, 44-52, 54 and 55 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 22-30, 43 and 53 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 December 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 22-30, 43 and 53 rejected under 35 U.S.C. 103(a) as being unpatentable over Tabib-Azar et al. (Non-destructive characterization of materials by evanescent microwaves) in view of Zaleski (US 3885239).

Regarding claims 22 and 53, Tabib-Azar et al. (hereafter Azar) in fig. 1 and 4 discloses: A method for measuring electrical impedance [see lines 1-4, section 4, page 590] of a sample using a probe having a tip [see column 2 on page 589], comprising:

measuring interaction [section 2.1, page 584] between said tip and said sample without contacting [fig. 4] said sample with said tip; and

deriving electrical impedance [using computer from admittance, see equation 1, page 585 and 13 at page 586] from said tip-sample interaction.

Azar discloses all the elements except for probe having a microwave cavity and pointed tip. Zaleski in fig. 2 discloses probe 33 having a microwave cavity [see Abstract and lines 31-34 of column 3] and pointed tip [tip of 33 towards 16]. Apparatus of Zaleski as disclosed in fig. 2 used for modulating radio frequency energy directly by acoustic energy with improved operating characteristics [see lines 25-58 of column 3]. Therefore,

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it would have been obvious to a person having ordinary skill in the art at the time the invention was made to modify probe of Azar as taught by Zaleski to obtain improved the operating characteristic.

Regarding claim 23, Azar discloses scanning evanescent microwave probe having tip extending from a coaxial or transmission line resonator [microstrip line resonator of fig. 1]

Regarding claim 24, Azar discloses quantitative and qualitative measurements [last paragraph of section 2 on page 584 and equations 1-3 on page 585].

Regarding claim 25, Azar discloses complex dielectric constant and conductivity [equations 1-16].

Regarding claim 26, Azar discloses sample comprises a metallic conductors material [copper on fiber glass at page 588, PCB of fig. 8 and aluminum plate of page 589].

Regarding claim 27, Azar discloses sample comprises multi-layered material [PCB of fig. 8].

Regarding claim 28, Azar discloses sample comprises a metallic conductors material [aluminum of page 589].

Regarding claims 29-30 and 43, Azar discloses interaction is measured with modulated external field [fig. 10 and conductivity of the sample due to its radiation variation].

***Election/Restrictions***

3. Newly submitted claims 54-55 directed to an invention that is independent or distinct from the invention originally claimed for the following reasons: measuring probe parameters (selected from the group consisting of resonant frequency shift and quality factor shift, wherein the resonant frequency shift and the quality factor shift results from an interaction between the sample and an evanescent electromagnetic field emitted from said probe) as claimed is distinct from the invention originally examined claims.

Since applicant has received an action on the merits for the originally presented invention, this invention has been constructively elected by original presentation for prosecution on the merits. Accordingly, claims 53-54 withdrawn from consideration as being directed to a non-elected invention. See 37 CFR 1.142(b) and MPEP § 821.03.

***Response to Arguments***

4. Applicant's arguments, see Remarks pages 11-16, filed 02/11/2005, with respect to the rejection(s) of claim(s) 21-30, 43 and 53 (particularly for claims 23 and 53) under 102(b) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Zaleski (US 3885239) and Tabib-Azar et al. (Non-destructive characterization of materials by evanescent microwaves).

***Conclusion***

5. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Paresh Patel whose telephone number is 571-272-1968. The examiner can normally be reached on 8:00 to 4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nestor Ramirez can be reached on 571-272-2034. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



May 13, 2005

Paresh Patel  
Primary Examiner  
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